

METHOD OF PLATING FOR FILLING VIA HOLES

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ABSTRACT OF THE DISCLOSURE

10 A method of plating for filling via holes, in which
each via hole formed in an insulation layer covering a
substrate so as to expose, at its bottom, part of a
conductor layer located on the substrate, is plated with
copper, to be filled with the plated metal, the method
comprising the steps of forming a copper film on the top
surface of the insulation layer covering the substrate,
15 and the side walls and bottoms of the respective via
holes, immersing the substrate having the copper film
formed in an aqueous solution containing a plating
promoter to thereby deposit the plating promoter on the
surface of the copper film, removing the plating promoter
20 from the surface of the copper film located on the
insulation layer and leaving the plating promoter on the
side walls and bottoms of the respective via holes, and
subsequently electroplating the substrate having the
copper film formed with copper to thereby fill the via
25 holes with the plated copper and simultaneously form a
continuous copper film which eventually covers the via
holes filled with the plated copper as well as the copper
film previously formed on the insulation layer. The
method is suitable for satisfactorily filling via holes,
30 having a small diameter and a large aspect ratio, with
plated copper.